

Cont'd
B1

the axicon. The lens may include a doublet. The lens may include a Cook triplet anastigmat. The lens may include a symmetric double Gaussian. The MTF of the lens may be higher with the axicon than without the axicon for bar code symbols having spatial wavelengths of 10-20 mils, inclusive. The MTF of the lens may be at least 0.2 for a 10 mil bar code symbol that is from about 4 to about 16 inches away from the lens. The light collection optical elements may include a moving element (e.g., a CCD device).

In the claims:

Please cancel claims 1-15 ✓

Please amend claims 17-28 as follows:

17. (Amended) The light collection optical elements of claim 29, wherein the axicon includes a polymer.

18. (Amended) The light collection optical elements of claim 29, wherein the axicon is disposed at a substantially spherical surface of the lens. ?

B2 19. (Amended) The light collection optical elements of claim 29, wherein a diffractive optical element and the axicon are disposed at different surfaces of the lens. ?

20. (Amended) The light collection optical elements of claim 29, comprising a diffractive optical element that includes at least eight phase levels. ?

21. (Amended) The light collection optical elements of claim 29, comprising a diffractive optical element that includes fewer than nine phase levels. ?

22. (Amended) The light collection optical elements of claim 29, wherein the axicon is affixed to a surface of the lens. ?

23. (Amended) The light collection optical elements of claim 29, wherein the lens has an aspherical surface having the optical properties of a combination of a spherical surface with the axicon. 7

24. (Amended) The light collection optical elements of claim 29, wherein the lens includes a doublet. X

Cont'd
B2 25. (Amended) The light collection optical elements of claim 29, wherein the lens includes a Cook triplet anastigmat. D

26. (Amended) The light collection optical elements of claim 29, wherein the lens includes a symmetric double Gaussian.

27. (Amended) The light collection optical elements of claim 29, wherein the MTF of the lens is higher with the axicon than without the axicon for bar code symbols having spatial wavelengths of 10-20 mils, inclusive. 112, 13

28. (Amended) The light collection optical elements of claim 29, wherein the MTF of the lens is at least 0.2 for a 10 mil bar code symbol that is from about 4 to about 16 inches away from the lens. (12) 13

Sub
C1
B3 [Add the following new claims:]

-- 29. Light collection optical elements for a bar code scanner, the light connection elements positioned to collect light reflected from a bar code symbol, the light collection optical elements comprising a light sensing element and a collection lens for collecting light reflected from the bar code symbol and directing the light to the light sensing element, the collection lens comprising an axicon element shaped and positioned to extend the working range over which the bar code symbol can be resolved by the sensing element. C